GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: May 16, 2003, 10:34:35 ; Search time 34 Seconds
(without alignments)
47.030 Million cell updates/sec

Title: US-09-551-151A-43
Perfect score: 64
Sequence: 1 SPQGIAGQRNFN 12

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 272260

Minimum DB seq length: 0
Maximum DB seq length: 18

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
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19: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
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22: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	64	100.0	12	20	AAW94414	Cancer protease-se
2	42	65.6	8	18	AAW17687	Substrate #1 for m
3	42	65.6	8	21	AAY97994	Synthetic substrat
4	42	65.6	8	22	AAU07721	Human leukaemia ce
5	42	65.6	8	22	AAB70111	Synthetic collagen
6	42	65.6	8	23	AAO14105	Dinitrophenol-tagg
7	42	65.6	9	14	AAR38477	Sequence of synthe
8	42	65.6	9	18	AAW27492	Cell binding pepti
9	42	65.6	9	18	AAW18826	Collagen binding p
10	42	65.6	9	20	AAY29992	Collagen cell bind
11	42	65.6	9	22	AAG67403	Synthetic peptide
12	42	65.6	15	12	AAR11114	Collagen peptide a
13	42	65.6	15	14	AAR38476	Sequence of peptid
14	42	65.6	15	18	AAW27491	Cell binding pepti
15	42	65.6	15	18	AAW18825	Collagen binding p
16	42	65.6	15	20	AAY29991	Collagen cell bind
17	42	65.6	15	20	AAY29587	Collagen fibronect
18	42	65.6	15	22	AAG67402	Synthetic peptide
19	42	65.6	15	23	ABB10111	Collagen cell bind
20	42	65.6	16	17	AAR92859	Collagen fragment
21	42	65.6	16	21	AAY76868	Collagen receptor
22	41	64.1	14	22	AAG66971	Mutant preproricin
23	41	64.1	18	22	AAG66972	Mutant preproricin
24	40	62.5	8	18	AAW17688	Substrate #2 for m
25	40	62.5	9	17	AAW49135	Human leucocyte an
26	40	62.5	9	19	AAW75516	Collagen II specif
27	40	62.5	12	20	AAW94448	Mutant proproricin
28	40	62.5	15	19	AAW75541	Collagen II specif
29	37	57.8	7	22	AAU07357	Gelatinase A (MMP-
30	37	57.8	7	22	AAU07720	Gelatinase A (MMP-
31	37	57.8	7	22	AAU07535	Gelatinase A, MMP-
32	37	57.8	8	21	AAB37326	Peptide linker #11
33	37	57.8	8	21	AAB01560	Collagenase sensit
34	37	57.8	8	22	AAB48683	Collagenase target
35	37	57.8	8	23	AAU77962	Cleavable peptide
36	37	57.8	8	23	AAU85689	Collagenase (matri
37	37	57.8	10	22	AAB74961	MMP fluorogenic pe
38	37	57.8	12	19	AAW45566	Type-I collagen al
39	36	56.2	8	21	AAB01562	Collagenase sensit
40	36	56.2	8	23	AAU85691	Collagenase (matri
41	35	54.7	7	14	AAR38479	Sequence of synthe
42	35	54.7	7	18	AAW27494	Cell binding pepti
43	35	54.7	7	18	AAW18828	Collagen binding p
44	35	54.7	7	20	AAY29994	Collagen cell bind
45	35	54.7	7	21	AAY97995	Synthetic substrat

ALIGNMENTS

RESULT 1
AAW94414
ID AAW94414 standard; peptide; 12 AA.
XX
AC AAW94414;
XX
DT 15-APR-1999 (first entry)
XX
DE Cancer protease-sensitive amino acid linker pAP-219 and pAP-220.
XX
KW Ricin-like toxin; cancer; viral infection; parasitic infection;
KW linker; B chain; A chain; protease; fungal infection; malaria;
KW leucocyte proliferation; cytomegalovirus; herpes; hepatitis;
KW rhinovirus; laryngeotracheitis; poliomyelitis; varicella zoster;
KW cystic fibrosis; multiple sclerosis.
XX
OS Unidentified.
OS Synthetic.
XX
PN WO9849311-A2.
XX
PD 05-NOV-1998.
XX
PF 30-APR-1998; 98WO-CA00394.
XX
PR 29-OCT-1997; 97US-0063715.
PR 30-APR-1997; 97US-0045148.
XX
PA (DNOV-) DE NOVO ENZYME CORP.
XX
PI Borgford T;
XX
DR WPI; 1999-009431/01.

```
XX
PT   New nucleic acid encoding ricin-like toxin with an interchain linker
PT   cleaved by protease - is specific for diseased cells, useful for,
PT   e.g. killing selectively cancer or infected cells
XX
PS   Claim 24; Fig 21; 352pp; English.
XX
CC   The present invention describes new purified and isolated nucleic acids
CC   (I) encoding: (i) the A and B chains of a ricin-like toxin (II); and
CC   (ii) a heterologous linker, joining the two chains and including a
CC   cleavage recognition site for a disease-specific protease (III). Also
CC   described are: (1) plasmids or baculovirus transfer vectors that contain
CC   (I); and (2) recombinant protein (IV) consisting of the A and B chains
CC   of (II) joined by the specified linker. (IV), produced by expression of
CC   (I) in host cells, are used to inhibit or kill diseased cells that
CC   produce (III), particularly for treating cancers (e.g. leucocyte
CC   proliferation; cancer of ovary, pancreas, breast or prostate; glioma) or
CC   infections caused by fungi, parasites (e.g. malaria) or viruses (e.g.
CC   cytomegalovirus (CMV), herpes, hepatitis, rhinovirus, laryngeotracheitis,
CC   poliomyelitis or varicella zoster), also cystic fibrosis and multiple
CC   sclerosis. Alternatively, (I) is used to express (IV) in vivo. (IV) is
CC   toxic specifically for (III)-expressing cells and does not depend for
CC   specificity on a cell-binding component. When used to treat virus-
CC   infected cells, transcytosis and cytotoxicity of (IV) are increased by
CC   retrograde translocation from endoplasmic reticulum to cytoplasm (which
CC   some viruses exploit to avoid immune detection), so selectivity and
CC   safety are further improved. (IV) are not toxic until chain A is
CC   released and this occurs only in target cells. The present sequence
CC   represents a specifically claimed cancer protease-sensitive amino acid
CC   linker from the present invention.
XX
SQ   Sequence   12 AA;

  Query Match             100.0%;  Score 64;  DB 20;  Length 12;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-05;
  Matches   12;  Conservative    0;  Mismatches   0;  Indels    0;  Gaps    0;

Qy      1 SPQGIAGQRNFN 12
          ||||||||||||
Db      1 SPQGIAGQRNFN 12


RESULT 2
AAW17687
ID   AAW17687 standard; peptide; 8 AA.
XX
AC   AAW17687;
XX
DT   07-JUL-1997  (first entry)
XX
DE   Substrate #1 for mammalian matrix metalloproteinase-1.
XX
KW   Enzyme substrate; MMP-1; protease; tissue abnormality; mesoporphyrin IX;
KW   malignancy; mammalian matrix metalloproteinase-1; bacterial collagenase;
KW   human interstitial collagenase; cathespin D; plasmin; fungal infection;
KW   human collagenase Type IV; mammalian matrix proteinase-2; tissue injury;
KW   72 kd gelatinase; MMP-2; intravascular clotting; bacterial infection;
KW   extravascular clotting abnormality; protozoal infection; therapy;
KW   parasitic infection.
XX
OS   Synthetic.
XX
PN   US5618790-A.
XX
PD   08-APR-1997.
XX
PF   05-OCT-1990;   90US-0593867.
XX
PR   16-MAR-1994;   94US-0213897.
PR   05-OCT-1990;   90US-0593867.
PR   10-FEB-1992;   92US-0833183.
XX
PA   (TOOH ) UNIV QUEENS KINGSTON.
XX
PI   Kennedy JC,  Pottier RH,  Ringuet M;
XX
DR   WPI; 1997-225448/20.
XX
PT   Conjugate system for delivering therapeutic or diagnostic agent to
PT   tissue abnormality site  - useful to treat or detect abnormalities
PT   caused by, e.g. malignancy or tissue injuries
XX
PS   Claim 5; Column 18; 10pp; English.
XX
CC   AAW17687-W17698 represent synthetic substrates for proteases known to be
CC   active in and/or immediately adjacent to certain specified cell or
CC   tissue abnormalities. This sequence is a substrate for mammalian matrix
CC   metalloproteinase-1 (MMP-1), which is also known as human interstitial
CC   collagenase. These sequences can be used in the conjugate system of the
CC   invention. The conjugate system is for delivering a therapeutic or
CC   diagnostic agent to a tissue abnormality site (TAS) in a patient. The
CC   system comprises a lipophilic or amphiphilic agent, covalently linked to
CC   a protease sensitive polypeptide (such as this sequence) having an amino
CC   acid sequence readily cleavable by a protease active at the TAS, but not
CC   at a normal tissue site, and a solubility modifier conjugated to the
CC   protease sensitive polypeptide. Peptides sensitive to cleavage by
CC   bacterial collagenase, cathespin D, plasmin, human collagenase Type IV
CC   (also known as 72 kd gelatinase, mammalian matrix proteinase-2, or
CC   MMP-2), or mesoporphyrin IX, can also be used in the system. The system
CC   can be used to treat or detect tissue abnormalities caused by
CC   malignancy, tissue injuries, intravascular or extravascular clotting
CC   abnormalities or bacterial, fungal, protozoal or parasitic infections.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 18;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      2 PQGIAGQR 9
          ||||||||
Db      1 PQGIAGQR 8


RESULT 3
AAY97994
ID   AAY97994 standard; peptide; 8 AA.
XX
AC   AAY97994;
XX
DT   11-SEP-2000  (first entry)
XX
DE   Synthetic substrate peptide #1, used to characterise a novel protease.
XX
KW   Synthetic peptide substrate; enzyme characterisation; protease;
KW   collagenase activity; gelatin; incomplete degradation; Aureobacterium;
KW   strain MIM-CG-9535-I; foodstuff manufacture; cosmetic.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   1
FT                   /note= "Conjugated to dinitrophenol (DNP)"
FT   Misc-difference 8
FT                   /note= "D-form residue"
XX
PN   JP2000102381-A.
XX
PD   11-APR-2000.
XX
PF   30-SEP-1998;   98JP-0277901.
XX
PR   30-SEP-1998;   98JP-0277901.
XX
PA   (DAII-) DAIICHI KAKAGU YAKUHIN KK.
PA   (MIYA-) MIYAGI KAGAKU KOGYO KK.
```

```
XX
DR   WPI; 2000-332081/29.
XX
PT   Novel protease having limited degradation activity for thermally
PT   denatured collagen and non-denatured solubilized collagen, produced
PT   from specific microorganism strain, has specific enzymological
PT   properties -
XX
PS   Claim 1; Page 2; 9pp; Japanese.
XX
CC   The invention relates to a novel protease from Aureobacterium strain
CC   MIM-CG-9535-I (FERMP-16867). Its molecular weight is 23 kD (plus or
CC   minus 2 kD) based on SDS-PAGE (sodium dodecyl sulphate polyacrylamide
CC   gel electrophoresis). The protease has limited degradation activity for
CC   thermally denatured collagen (gelatin) and non-denatured solubilised
CC   collagen of molecular weights of 130 kD and 300 kD respectively. Gelatin
CC   and non-denatured collagen are degraded to products of molecular weights
CC   of 70 kD and 40 kD respectively. The optimum pH and temperature of the
CC   protease is pH 5.5-7 and 37-40 degrees Celsius. The enzyme is able to
CC   partially degrade the synthetic substrate DNP-Pro-Gln-Gly-Ile-Ala-Gly-
CC   Gln-D-Arg (AAY97994) which contains a proline residue, but it does not
CC   appear to degrade the synthetic substrate DNP-Gln-Gly-Ile-Ala-Gly-Gln-
CC   D-Arg (AAY97995) which does not contain a proline. The protease is
CC   inhibited by O-phenanthroline and L-cysteine, and is also partially
CC   inhibited by ethylene-diamine tetraacetic acid, N-ethylmaleimide,
CC   iodoacetamide and phenyl methane sulphonylfluoride. The novel protease
CC   is useful for degrading high molecular weight gelatin and solubilised
CC   collagen into smaller units. These can be used in foodstuffs and
CC   cosmetics as gelatinisers, foaming agents and thickeners, and can also
CC   be used in the manufacture of medicine capsules. The decomposition
CC   products of the novel protease have low antigenicity, good solubility
CC   and low gelling strength, and are easy to form into films and capsules.
CC   Sequences AAY97994 and AAY97995 represent synthetic protease substrates
CC   used to characterise the activity of the novel protease of the
CC   invention.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 21;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 4
AAU07721
ID   AAU07721 standard; peptide; 8 AA.
XX
AC   AAU07721;
XX
DT   21-NOV-2001  (first entry)
XX
DE   Human leukaemia cell HL-60 45 kD matrix metalloprotease substrate.
XX
KW   Human leukaemia cell; HL-60; 45 kD matrix metalloprotease;
KW   protease cleavage site; cytostatic; antirheumatic;
KW   antirheumatic; antiarthritic; immunosuppressive; antiinflammatory;
KW   anti-HIV; virucide; viral display; gene therapy; cancer; inflammation;
KW   rheumatoid arthritis; autoimmune disease; infection; AIDS;
KW   acquired immunodeficiency syndrome; herpes; hepatitis;
KW   protease inhibitor; drug screening.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   5..6
FT                   /label= Protease_cleavage_site
XX
PN   WO200162980-A1.
XX
PD   30-AUG-2001.
XX
PF   23-FEB-2001; 2001WO-US05859.
XX
PR   25-FEB-2000; 2000US-0185203.
XX
PA   (CAMB-) CAMBRIDGE DRUG DISCOVERY LTD.
XX
PI   Russell SJ,  Chadwick MP;
XX
DR   WPI; 2001-541706/60.
XX
PT   Identifying protease inhibitors by assaying for the presence of a
PT   transferable label from a viral display package in the presence of test
PT   compound, where an increase in cell label indicates the compound as a
PT   protease inhibitor -
XX
PS   Disclosure; Page 10; 46pp; English.
XX
CC   The invention relates to identifying a test substance for the ability to
CC   inhibit a protease by contacting a protease-containing target cell with a
CC   viral display package (comprising a receptor-binding polypeptide which
CC   binds to a receptor on the surface of the cell, a protease cleavage site
CC   for the protease expressed by the cell, and a fusion-mediating
CC   polypeptide, such that proteolytic cleavage of the cleavage site does not
CC   permit substantial transfer of the transferable label from the phage
CC   package to the cell), and detecting a transferable label to indicate if
CC   the substance is a protease inhibitor. The method is useful for
CC   identifying a test substance for its ability to inhibit a protease. The
CC   delivery of an expressible polynucleotide to a target cell is also
CC   possible, and both methods are applicable for a number of target cells.
CC   The methods are useful for therapeutic purposes and as a model system for
CC   optimising delivery of transferable labels. The protease inhibitors
CC   identified are useful for treating cancer, inflammation, rheumatoid
CC   arthritis, autoimmune diseases, infections including AIDS (acquired
CC   immunodeficiency syndrome), herpes and hepatitis. A whole range of
CC   proteins, peptides, antisense transcripts and ribozyme sequences can be
CC   encoded within an expressible polynucleotide (i.e. a gene therapy
CC   technique) and delivered to a target cell for a therapeutic effect. The
CC   target cells may also be cells infected by pathogens such as HIV virus,
CC   rhinovirus, herpes virus, hepatitis virus or other infectious agents
CC   which expresses proteases. The present sequence is a synthetic
CC   substrate peptide which is cleaved by a 45 kD matrix metalloprotease
CC   secreted by HL-60 human leukaemia cells. This peptide can be used
CC   in the method of the invention.
XX
SQ   Sequence   8 AA;

  Query Match             65.6%;  Score 42;  DB 22;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       1 PQGIAGQR 8


RESULT 5
AAB70111
ID   AAB70111 standard; peptide; 8 AA.
XX
AC   AAB70111;
XX
DT   18-MAY-2001  (first entry)
XX
DE   Synthetic collagenase substrate of novel protease enzyme.
XX
KW   Collagenase; gelatin; protease; jelly production;
KW   gelatin capsule synthesis; drug synthesis.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
```

FT Modified-site 1
FT /note= "attached to DNP"
XX
PN JP2000325095-A.
XX
PD 28-NOV-2000.
XX
PF 18-MAY-1999; 99JP-0137528.
XX
PR 18-MAY-1999; 99JP-0137528.
XX
PA (MIYA-) MIYAGI KAGAKU KOGYO KK.
PA (DAII-) DAIICHI KAKAGU YAKUHIN KK.
XX
DR WPI; 2001-228834/24.
XX
PT Preparing degraded gelatin peptides useful in drugs, cosmetics and
PT foodstuffs, using novel protease which cuts protein at specific points
PT so that resulting peptides have specific N-terminal amino acid
PT sequences -
XX
PS Claim 6; Page 1; 16pp; Japanese.
XX
CC The present sequence is provided in a specification relating to a method
CC for manufacturing peptides from proteins. The proteins are degraded using
CC a novel protease enzyme which cuts the proteins at between 1 and 3
CC points. The resulting peptides have an N-terminal end having a specific
CC amino acid sequence. The method may be used in the manufacture of
CC jelly-like foodstuffs, gelatin capsules and drugs. It is also used for
CC coating the surface of a material useful as an artificial living tissue.
CC The gelatin peptides prepared using the novel protease enzyme have
CC reduced allergenicity and antigenicity and dissolve readily in cold
CC water. The jelly-like gels prepared using the gelatin peptides fuse well
CC with other liquids even at room temperature.
XX
SQ Sequence 8 AA;

Query Match 65.6%; Score 42; DB 22; Length 8;
Best Local Similarity 100.0%; Pred. No. 7.8e+05;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 1 PQGIAGQR 8

RESULT 6
AAO14105
ID AAO14105 standard; peptide; 8 AA.
XX
AC AAO14105;
XX
DT 22-APR-2002 (first entry)
XX
DE Dinitrophenol-tagged substrate peptide.
XX
KW Dinitrophenol-tagged substrate; ovotransferrin; skin care;
KW cosmetic product; collagenase; gelatinase; collagen; elastin; elastase.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Modified-site 1
FT /note= "N-terminal dinitrophenol tag"
FT Misc-difference 8
FT /note= "D-form residue"
XX
PN WO200187292-A2.
XX
PD 22-NOV-2001.
XX
PF 14-MAY-2001; 2001WO-CA00687.
XX
PR 15-MAY-2000; 2000US-204352P.
XX
PA (CAIN-) CANADIAN INOVATECH INC.
XX
PI Smith SR, Charter EA;
XX
DR WPI; 2002-062327/08.
XX
PT Use of ovotransferrin for inhibiting degradation of elastin or
PT collagen, and cosmetic compositions comprising ovotransferrin, useful
PT for skin care -
XX
PS Example 3; Page 23; 34pp; English.
XX
CC The invention comprises the use of ovotransferrin in cosmetic skin care
CC compositions to inhibit elastase and collagenase (also known as
CC gelatinase). Collagen and elastin are both main components of skin and
CC are commonly used in topically-applied cosmetic products. Collagen and
CC elastin are degraded by elastase and collagenase which are present in
CC both humans and microorganisms. It has been found that the addition of
CC ovotransferrin to a composition containing collagen and elastin will
CC substantially inhibit the degradation of collagen and elastin by
CC collagenase and elastase. The compositions of the invention are useful as
CC skin care compositions. The present sequence is a dinitrophenol-tagged
CC substrate peptide used in an example of the invention.
XX
SQ Sequence 8 AA;

Query Match 65.6%; Score 42; DB 23; Length 8;
Best Local Similarity 100.0%; Pred. No. 7.8e+05;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 1 PQGIAGQR 8

RESULT 7
AAR38477
ID AAR38477 standard; peptide; 9 AA.
XX
AC AAR38477;
XX
DT 02-DEC-1993 (first entry)
XX
DE Sequence of synthetic fragment of peptide P-15 which spans
DE approx. residues 766-780 of the alpha-1(I) chain of collagen.
XX
KW Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.
XX
OS Synthetic.
XX
PN WO9311781-A.
XX
PD 24-JUN-1993.
XX
PF 03-DEC-1992; 92WO-US10420.
XX
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1993-213814/26.
XX
PT Synthetic peptide mimicking collagen binding to cells - used in
PT composite with bio-material matrix for soft and hard tissue
PT repair or reconstruction
XX
PS Claim 1; Table 1, page 9; 26pp; English.
XX
CC The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)

```
CC   chain of collagen. The P-15 region does not occur as a natural
CC   fragment of collagen nor is it a product of natural enzymatic
CC   cleavage. The P-15 region represent half of one turn of the collagen
CC   triple helix. The sequence contd. in P-15 can acquire a conformation
CC   dramatically different from the triple helical conformation
CC   generally observed in the rest of the collagen molecule. AAR38477-82
CC   is a family of synthetic peptide fragments of P-15. They mimic the
CC   cell binding domain of collagen. The domain includes a core
CC   sequence that, at physiologic conditions, is folded in a beta-bend
CC   formed at the 773-774 Ile-Ala. The relative cell-binding activity
CC   of this peptide is 100.
XX
SQ   Sequence   9 AA;

  Query Match            65.6%;  Score 42;  DB 14;  Length 9;
  Best Local Similarity  100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       2 PQGIAGQR 9


RESULT 8
AAW27492
ID   AAW27492 standard; peptide; 9 AA.
XX
AC   AAW27492;
XX
DT   20-APR-1998  (first entry)
XX
DE   Cell binding peptide #2 derived from collagen.
XX
KW   Bioreactor; packing material; cell culture; collagen alpha1(I) chain;
KW   cell binding peptide; matrix.
XX
OS   Synthetic.
OS   Mammalia.
XX
PN   US5674848-A.
XX
PD   07-OCT-1997.
XX
PF   03-AUG-1994;   94US-0285570.
XX
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1997-502373/46.
XX
PT   Bioreactor packing material for cell culture - comprising matrix
PT   coated with cell binding peptide
XX
PS   Claim 1; Col 18; 13pp; English.
XX
CC   This is a specifically claimed peptide, derived from a region of the
CC   alpha1(I) chain of collagen which is sometimes referred to as "P-15". It
CC   can be used as a cell binding peptide in a new packing material, which
CC   is useful for cell culture in a bioreactor. The material comprises a
CC   matrix formed of a biomaterial, i.e. a material that is biologically
CC   compatible for in vivo applications and for cell culture in vitro, and
CC   the cell binding peptide. A bioreactor containing the packing material
CC   can be used to culture cells, e.g. mammalian cells for the production of
CC   monoclonal antibodies. The peptides are more effective than collagen in
CC   promoting cell attachment.
XX
SQ   Sequence   9 AA;

  Query Match            65.6%;  Score 42;  DB 18;  Length 9;
  Best Local Similarity  100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       2 PQGIAGQR 9


RESULT 9
AAW18826
ID   AAW18826 standard; peptide; 9 AA.
XX
AC   AAW18826;
XX
DT   05-JAN-1998  (first entry)
XX
DE   Collagen binding peptide mimic 2.
XX
KW   implant; biomaterial matrix; enhanced cell binding; collagen;
KW   beta-bend; fold; substrate; reconstructive surgery; bone; ligament;
KW   repair; tooth.
XX
OS   Synthetic.
XX
PN   US5635482-A.
XX
PD   03-JUN-1997.
XX
PF   14-AUG-1989;   89US-0393621.
XX
PR   22-JUL-1994;   94US-0278878.
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1997-309859/28.
XX
PT   Implant bearing cell-binding collagen-mimetic peptide - for
PT   promoting cell attachment
XX
PS   Claim 1; Column 18; 12pp; English.
XX
CC   New implants comprise a biomaterial matrix and a peptide carried by the
CC   matrix, where the peptide has enhanced cell binding with respect to
CC   collagen and has a domain that mimics collagen binding to cells, the
CC   domain including at least -Ile-Ala- folded in a beta-bend at
CC   physiological conditions. The peptide is one of AAW18825-34 or one of 3
CC   tripeptides (NAc-Ile-Ala-Ala; Ile-Ala-beta Ala; and NAc-Ile-Ala-N-Me).
CC   The implant is used as a substrate for growing cells, e.g. for use in
CC   reconstructive surgery, e.g. for bone or ligament repair or as tooth
CC   implants. The peptide promotes cell attachment to the matrix and also
CC   cell migration into the matrix when the matrix is porous.
XX
SQ   Sequence   9 AA;

  Query Match            65.6%;  Score 42;  DB 18;  Length 9;
  Best Local Similarity  100.0%;  Pred. No. 7.8e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       2 PQGIAGQR 9


RESULT 10
AAY29992
ID   AAY29992 standard; peptide; 9 AA.
XX
AC   AAY29992;
XX
```

DT 02-DEC-1999 (first entry)
XX
DE Collagen cell binding domain mimotope #2.
XX
KW Collagen; cell binding domain; biomaterial; soft tissue repair;
KW hard tissue repair; reconstruction; cell surface receptor;
KW fibronectin; beta-bend; cartilage; tendon; ligament; bone.
XX
OS Synthetic.
XX
PN US5958428-A.
XX
PD 28-SEP-1999.
XX
PF 20-MAY-1997; 97US-0859610.
XX
PR 22-JUL-1994; 94US-0278878.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1999-561009/47.
XX
PT Synthetic peptide additives with enhanced collagen binding affinities
PT useful for the production of apparatus for soft tissue, cartilage and
PT bone repair -
XX
PS Claim 3; Column 25; 16pp; English.
XX
CC The present invention describes synthetic peptide additives (SPAs) with
CC enhanced collagen binding affinities. AAY29991 to AAY30000 represent
CC specifically claimed examples of the SPA's.The additives comprise
CC domains that mimic the binding sites of collagen to cells (but with
CC higher affinity) and promote cell attachment when the additives are
CC carried on repair or reconstructive apparatus. The SPA may be used in
CC the construction of apparatus for soft tissue, cartilage, tendon,
CC ligament and bone repair. The SPA mimics and enhances the binding of
CC cells to the tissue repair apparatus.
XX
SQ Sequence 9 AA;

Query Match 65.6%; Score 42; DB 20; Length 9;
Best Local Similarity 100.0%; Pred. No. 7.8e+05;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 2 PQGIAGQR 9

RESULT 11
AAG67403
ID AAG67403 standard; peptide; 9 AA.
XX
AC AAG67403;
XX
DT 13-NOV-2001 (first entry)
XX
DE Synthetic peptide mimicking cell binding domain of collagen.
XX
KW Cell binding; collagen; cell migration; collagen receptor; tissue repair;
KW metalloproteinase; prolyl hydroxylase; tissue reconstruction; arthritis;
KW bone repair; tooth implant; ligament repair; scar tissue; osteoporosis;
KW bone disease; cartilage repair; joint disease; tendon repair.
XX
OS Synthetic.
XX
PN US6268348-B1.
XX
PD 31-JUL-2001.
XX
PF 08-JUN-1999; 99US-0328347.
XX
PR 22-JUL-1994; 94US-0278878.
PR 20-MAY-1997; 97US-0859610.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 2001-540321/60.
XX
PT New collagen binding synthetic peptide useful for soft and hard tissue
PT repair e.g. bone repairs comprises a family of amino acid sequence -
XX
PS Claim 2; Column 25; 16pp; English.
XX
CC The present sequence represents a synthetic peptide, which mimics the
CC cell binding domain of collagen. The cell binding ability of the
CC peptide is enhanced with respect to collagen. The peptide promotes cell
CC migration into porous lattices; binds to collagen receptors; induces
CC metalloproteinases; can down regulate prolyl hydroxylase and collagen;
CC inhibits cell binding to collagen or inhibits cell migration in vitro.
CC The peptide is used for soft and hard tissue repair or reconstruction,
CC e.g. bone repair, tooth implants and ligament repair; for in vitro uses;
CC as an inhibitor of collagen synthesis to block formation of scar tissue
CC and thus promotes scarless healing; as bone filling/fusion for
CC osteoporosis and other bone diseases, cartilage repair for arthritis and
CC other joint disease and tendon repair; for soft tissue repair e.g. nerve,
CC organ, skin, vascular, muscle and ophthalmic applications.
XX
SQ Sequence 9 AA;

Query Match 65.6%; Score 42; DB 22; Length 9;
Best Local Similarity 100.0%; Pred. No. 7.8e+05;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 2 PQGIAGQR 9

RESULT 12
AAR11114
ID AAR11114 standard; peptide; 15 AA.
XX
AC AAR11114;
XX
DT 17-MAY-1991 (first entry)
XX
DE Collagen peptide analogue.
XX
KW Collagen alpha-1 chain; cell adhesion; vertebrates.
XX
OS synthetic.
XX
PN WO9102537-A.
XX
PD 07-MAR-1991.
XX
PF 13-AUG-1990; 90WO-US04538.
XX
PR 14-AUG-1989; 89US-0393621.
XX
PA (REGC) UNIV OF CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1991-087110/12.
XX
PT Synthetic peptide(s) analogous to collagen - promote cell adhesion

```
XX
PS   Claim 1; page 16; 20pp; English.
XX
CC   This peptide corresps. to a region of the alpha-1 chain of collagen.
CC   It is useful in a compsn. for promoting vertebrate cell (esp.
CC   fibroblast) adhesion to a substrate.  It is free from natural
CC   folding, glycosylation, cross-linking, hydroxylation and association
CC   with other peptide chains.
XX
SQ   Sequence   15 AA;

  Query Match             65.6%;  Score 42;  DB 12;  Length 15;
  Best Local Similarity   100.0%;  Pred. No. 0.94;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       5 PQGIAGQR 12


RESULT 13
AAR38476
ID   AAR38476 standard; peptide; 15 AA.
XX
AC   AAR38476;
XX
DT   02-DEC-1993  (first entry)
XX
DE   Sequence of peptide P-15 which spans approx. residues 766-780 of the
DE   alpha-1(I) chain of collagen.
XX
KW   Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.
XX
OS   Synthetic.
XX
PN   WO9311781-A.
XX
PD   24-JUN-1993.
XX
PF   03-DEC-1992;   92WO-US10420.
XX
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1993-213814/26.
XX
PT   Synthetic peptide mimicking collagen binding to cells - used in
PT   composite with bio-material matrix for soft and hard tissue
PT   repair or reconstruction
XX
PS   Disclosure; Table 1, page 9; 26pp; English.
XX
CC   The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)
CC   chain of collagen. The P-15 region does not occur as a natural
CC   fragment of collagen nor is it a product of natural enzymatic
CC   cleavage. The P-15 region represent half of one turn of the collagen
CC   triple helix. The sequence contd. in P-15 can acquire a conformation
CC   dramatically different from the triple helical conformation
CC   generally observed in the rest of the collagen molecule. AAR38477-82
CC   is a family of synthetic peptide fragments of P-15. They mimic the
CC   cellb binding domain of collagen. The domain includes a core
CC   sequence that, at physiologic conditions, is folded in a beta-bend
CC   formed at the Ile-Ala.
XX
SQ   Sequence   15 AA;

  Query Match             65.6%;  Score 42;  DB 14;  Length 15;
  Best Local Similarity   100.0%;  Pred. No. 0.94;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       5 PQGIAGQR 12


RESULT 14
AAW27491
ID   AAW27491 standard; peptide; 15 AA.
XX
AC   AAW27491;
XX
DT   20-APR-1998  (first entry)
XX
DE   Cell binding peptide #1 derived from collagen.
XX
KW   Bioreactor; packing material; cell culture; collagen alphal(I) chain;
KW   cell binding peptide; matrix.
XX
OS   Synthetic.
OS   Mammalia.
XX
PN   US5674848-A.
XX
PD   07-OCT-1997.
XX
PF   03-AUG-1994;   94US-0285570.
XX
PR   14-AUG-1989;   89US-0393621.
PR   09-DEC-1991;   91US-0804782.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Bhatnagar RS;
XX
DR   WPI; 1997-502373/46.
XX
PT   Bioreactor packing material for cell culture - comprising matrix
PT   coated with cell binding peptide
XX
PS   Claim 1; Col 18; 13pp; English.
XX
CC   The present peptide sequence corresponds to a region of the alphal(I)
CC   chain of collagen which is sometimes referred to as "P-15". It can be
CC   used as a cell binding peptide in a new packing material, which is useful
CC   for cell culture in a bioreactor. The material comprises a matrix formed
CC   of a biomaterial, i.e. a material that is biologically compatible for in
CC   vivo applications and for cell culture in vitro, and the cell binding
CC   peptide. A bioreactor containing the packing material can be used to
CC   culture cells, e.g. mammalian cells for the production of monoclonal
CC   antibodies. The peptides are more effective than collagen in promoting
CC   cell attachment.
XX
SQ   Sequence   15 AA;

  Query Match             65.6%;  Score 42;  DB 18;  Length 15;
  Best Local Similarity   100.0%;  Pred. No. 0.94;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       2 PQGIAGQR 9
           ||||||||
Db       5 PQGIAGQR 12


RESULT 15
AAW18825
ID   AAW18825 standard; peptide; 15 AA.
XX
AC   AAW18825;
XX
DT   05-JAN-1998  (first entry)
XX
DE   Collagen binding peptide mimic 1.
XX
```

KW implant; biomaterial matrix; enhanced cell binding; collagen;
KW beta-bend; fold; substrate; reconstructive surgery; bone; ligament;
KW repair; tooth.
XX
OS Synthetic.
XX
PN US5635482-A.
XX
PD 03-JUN-1997.
XX
PF 14-AUG-1989; 89US-0393621.
XX
PR 22-JUL-1994; 94US-0278878.
PR 14-AUG-1989; 89US-0393621.
PR 09-DEC-1991; 91US-0804782.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Bhatnagar RS;
XX
DR WPI; 1997-309859/28.
XX
PT Implant bearing cell-binding collagen-mimetic peptide - for
PT promoting cell attachment
XX
PS Claim 1; Column 18; 12pp; English.
XX
CC New implants comprise a biomaterial matrix and a peptide carried by the
CC matrix, where the peptide has enhanced cell binding with respect to
CC collagen and has a domain that mimics collagen binding to cells, the
CC domain including at least -Ile-Ala- folded in a beta-bend at
CC physiological conditions. The peptide is one of AAW18825-34 or one of 3
CC tripeptides (NAc-Ile-Ala-Ala; Ile-Ala-beta Ala; and NAc-Ile-Ala-N-Me).
CC The implant is used as a substrate for growing cells, e.g. for use in
CC reconstructive surgery, e.g. for bone or ligament repair or as tooth
CC implants. The peptide promotes cell attachment to the matrix and also
CC cell migration into the matrix when the matrix is porous.
XX
SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 18; Length 15;
Best Local Similarity 100.0%; Pred. No. 0.94;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 PQGIAGQR 9
||||||||
Db 5 PQGIAGQR 12

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